

**SYSTEM AND METHOD FOR OPTIMIZING CONTROL PARAMETER
SETTINGS IN A CHAIN OF VIDEO PROCESSING ALGORITHMS**

ABSTRACT OF THE DISCLOSURE

5 For use in a video processing system that is capable of
processing a video stream using a chain of video processing
algorithms, there is disclosed a system and method for optimally
configuring control parameter settings of each video processing
algorithm within the chain of video processing algorithms in order
10 to provide a high quality video image. The video processing system
of the present invention comprises a chain of video processing
algorithms, an optimization unit, and an objective quality metric
unit. An output video stream from the chain of video processing
units is fed back to the objective quality metric unit. The
15 objective quality metric unit calculates a fitness value and
provides the fitness value to the optimization unit. The
optimization unit uses the fitness value to configure the control
parameter settings for the video processing algorithms. In one
advantageous embodiment of the present invention, the optimization
20 unit uses a genetic algorithm in the optimization process. The
video processing system iteratively converges toward control
parameter configurations that produce a very high quality video
image.